(1998) 10:2994-3006; Sandi *et al.*, *Neuroscience* (2001) 102:329-339; Sandi, *et al.*, *Biol. Psychiatry* (2003) 54:599-607). Furthermore, kindling of the amygdala, but not the entorhinal cortex, induces sprouting of infrapyramidal mossy fibers in the CA3 region (Represa *et al.*, *Neurosci. Lett.* (1989) 99:345-50).

[0169] It is understood that the examples and embodiments described herein are for illustrative purposes only and that various modifications or changes in light thereof will be suggested to persons skilled in the art and are to be included within the spirit and purview of this application and scope of the appended claims. All publications, patents, and patent applications cited herein are hereby incorporated by reference in their entirety for all purposes.

WHAT IS CLAIMED IS:

1. A method of ameliorating an anxiety response in a mammal in need thereof, the method comprising administering to the mammal a compound that inhibits ST8Sia-II sialyltransferase activity.

2. The method of claim 1, wherein the compound comprises an ST8Sia-II sialyltransferase substrate analog.

3. The method of claim 2, wherein said substrate analog is an analog of a donor substrate.

4. The method of claim 3, wherein said analog is a competitive inhibitor of said donor substrate.

5. The method of claim 3, wherein said analog is a noncompetitive inhibitor of said donor substrate.

6. The method of claim 3, wherein said analog of a donor substrate is an analog of CMP-sialic acid.

7. The method of claim 2, wherein said substrate analog is an analog of an acceptor substrate.

8. The method of claim 7, wherein said analog is a competitive inhibitor of said acceptor substrate.

9. The method of claim 7, wherein said analog is a noncompetitive inhibitor of said acceptor substrate.

10. The method of claim 7, wherein said analog of an acceptor substrate is an analog of a sialic acid selected from the group consisting of an α-2,3-linked sialic acid, an α-2,6-sialic acid and an α-2,8-linked sialic acid.

11. The method of claim 1, wherein said mammal is a human.

12. The method of claim 1, wherein said anxiety response comprises fear.

13. The method of claim 1, wherein said anxiety response comprises depression.

14. A method of identifying a compound for use in inhibiting an anxiety response in a mammal, the method comprising:

a) providing an assay mixture which comprises: an ST8Sia-II sialyltransferase, a potential anxiety response modulator, a cytidine 5'-monophosphate (CMP)-sialic acid donor saccharide, an acceptor saccharide, and additional reagents required for ST8Sia-II sialyltransferase activity;

b) incubating the assay mixture under conditions in which the ST8Sia-II sialyltransferase is active; and

c) determining whether the amount of sialic acid transferred to the acceptor saccharide is increased or decreased in comparison to an assay mixture which lacks the potential anxiety response modulator;

wherein a potential anxiety response modulator which results in a decrease in sialic acid transfer to the acceptor saccharide is suitable for inhibiting an anxiety response.

15. The method of claim 14, wherein said acceptor saccharide for the ST8Sia-II sialyltransferase comprises an asparagine (N-) linked glycan.

16. The method of claim 15, wherein the N-linked glycan comprises at least one terminal sialic acid moiety selected from the group consisting of an α2-3-linked terminal sialic acid, an α2-6-linked terminal sialic acid, and an α2-8-linked terminal sialic acid.

17. A method of identifying compounds for inhibiting an anxiety response in a mammal, the method comprising:

providing a cell which comprises a polynucleotide that encodes a ST8Sia-II polysialyltransferase, an acceptor saccharide for the ST8Sia-II sialyltransferase, and CMP-sialic acid;

contacting the cell with a potential anxiety response modulator and incubating the cell under conditions in which the ST8Sia-II sialyltransferase is normally expressed; and

determining whether the polysialic acid (PSA) level is increased or decreased compared to the PSA level in the absence of the potential anxiety response modulator;

wherein a potential anxiety response modulator that causes a decrease in the amount of PSA produced is useful for inhibiting an anxiety response in a mammal.

18. The method of claim 17, wherein said acceptor saccharide for the ST8Sia-II sialyltransferase is an asparagine (N-) linked glycan.

19. The method of claim 18, wherein the N-linked glycan comprises at least one terminal sialic acid moiety selected from the group consisting of an α2-3-linked terminal sialic acid, an α2-6-linked terminal sialic acid, and an α2-8-linked terminal sialic acid.